Wang, Fei

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Location: Budapest, Hungary

Education Background

- **University**: Budapest University of Technology and Economics
- **Degree**: MSc in Computer Engineering
- **GPA**: 4.12/5

2022-09-01 - 2024-07-01

- **University**: Shangluo University
- **Degree**: BSc in Computer Science and Technology
- **GPA**: 82/100

2018-09-01 - 2022-07-01

Professional Skills

- **System Design**: Capable of grasping the overall architecture design of systems, with the ability to design highly available and scalable systems.
- **Performance Optimization**: Able to perform performance analysis and optimization of systems, solving system bottlenecks.
- **Distributed Systems**: Mastery of fundamental principles and common technologies of distributed systems, capable of designing and implementing various components of distributed systems.

Technical Skills

- **Fundamental Knowledge**
  - **Data Structures and Algorithms**: Solid understanding of various data structures (such as arrays, linked lists, trees, graphs, etc.) and algorithms (such as sorting, searching, dynamic and greedy algorithms, etc.), and their application in solving real-world problems.
  - **Computer Organization and Architecture**: Mastery of the basic composition, working principles, and functions of various parts of computer systems.
  - **Operating Systems**: Familiarity with fundamental principles of operating systems, including process management, memory management, file systems, and device management.
  - **Computer Networks**: Understanding of basic principles and protocols of computer networks, such as TCP/IP protocol suite, HTTP/HTTPS protocols, etc.
- **Programming Languages**
  - **Deep Understanding of Object-Oriented Programming (OOP)**: Ability to apply OOP principles (such as encapsulation, inheritance, polymorphism, abstraction) in practical programming.
  - **JAVA, Rust, C++**: Proficient in using these languages for efficient programming.
  - **Golang and Python**: Experienced in using these languages for development as needed.
  - **JavaScript**: Proficient in JavaScript for both front-end and back-end development.

- **Development Frameworks and Tools**
  - **Java Development Frameworks**: Familiar with Spring Boot and Spring Cloud, proficient in using service governance components.
  - **Microservices**: Understanding of microservices design principles, proficient in microservices governance methods, familiar with distributed system consensus protocols, and expert in distributed locks and distributed transaction solutions.
  - **Front-end Development**: Proficient in using React and Next.js for front-end development.
  - **Databases**
    - **MySQL**: Proficient in usage, understanding of indexing and optimization, and mastery of common SQL optimization techniques.
    - **Redis**: Expert in Redis, understanding various data types and underlying principles, familiar with primary use cases of Redis.
- **Message Queues**: Proficient in using RocketMQ for asynchronous decoupling of system calls.
- **Containerization and Orchestration**
  - **Docker**: Proficient in using Docker for containerized application development and deployment.
  - **Kubernetes (K8S)**: Skilled in using K8S for container orchestration and management.
  - **Service Mesh**: Experienced with Istio, capable of using Istio for service governance in K8S.

Project Experience

E-Food Full Stack Developer (School Class Project)

Duration: September 2023 - December 2023

Project Name: E-Food

Project Description: This project is an in-restaurant self-service ordering system developed using a front-end and back-end separation approach. The main front-end tech stack includes React, TailwindCSS, and Next.js, while the back-end development languages are Rust, Golang, and Java.

Details:

1. **Intelligent Food Search**:
   - Implemented using Elasticsearch and ChatGPT, combined with speech-to-text technology to allow users to describe their needs verbally.
   - ChatGPT accesses the current knowledge base in Elasticsearch to recommend food based on various factors such as mood and health status.
2. **Single Sign-On (SSO)**:
   - Implemented with Keycloak, supporting login via social accounts like Github, Google, and Facebook.
   - Based on the OpenID Connect protocol.
3. **Authorization Design**:
   - Completed using Casbin for fine-grained access control.
4. **Static Site Generation (SSG)**:
   - Utilized Next.js's SSG feature to quickly render the front page for initial load.

5. **Redis for Caching and Distributed Lock**:
   - Used Redis as a cache database to store frequently searched results and to implement distributed locking.
6. **Distributed Transactions**:
   - Employed RocketMQ for transactional messaging and DTM for two-phase commit distributed transactions for operations like deduction and inventory reduction.
7. **Distributed WebSocket Service**:
   - Built to notify the kitchen in real-time when an order is placed.
   - Implemented with consistent hashing load balancing to maintain session stability and MQ for communication between different WebSocket instances.
8. **CI/CD Pipeline**:
   - Used GitLab for version control and Jenkins for CI/CD.
   - Automated the pipeline from compiling, packaging into Docker images, uploading to Harbor, and deploying to a Kubernetes test environment.
9. **Kubernetes and Docker**:
   - Kubernetes used as the container orchestration framework and Docker as the container environment.
   - Istio used as a service mesh for service governance, ensuring no code intrusion for service governance.
10. **CDN for Content Delivery**:
    - Leveraged CDN services for fast global content distribution, ensuring smooth user access.
11. **High Availability Deployment**:
    - Implemented high availability for all components, such as Minio for object storage, Redis clusters, RocketMQ clusters, MySQL master-slave setup, and Elasticsearch clusters.
    - Used Haproxy for high availability of the Kubernetes API server.
    - Adopted a two-site three-center architecture to ensure complete service availability and data safety, with important data synchronized to remote nodes.

Publications

Title: An Approach to Formal Verification of Atomic Swap Protocols

Conference Title: 2nd Workshop on Intelligent Infocommunication Networks, Systems and Services, 2024

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